



Letter to the Editor

The Child Abuse Pediatrics trainee and forensic pathology

1. Introduction

Certification in Child Abuse Pediatrics (CAP) is a recent phenomenon in the United States and according to the American Board of Pediatrics, any fellowship program for graduates commencing training after January 1, 2010 must be of 36 months duration.¹ The Accreditation Council on Graduate Medical Education which has responsibility for approving such programs require that as part of this training, a physician seeking certification in CAP must demonstrate “knowledge of forensic pathology”² although it is not quite clear what this means. Forensic pathology is a vast subject which within it has various facets, some of which may not be relevant to the CAP trainee.

On the other hand the American Board of Pediatrics is considerably more specific. As examples, under its knowledge requirements, the trainees should learn to “recognize the pathologic features of SIDS on autopsy”, “characterize the components and findings of a forensic pediatric autopsy that assist in the assessment of a potential child homicide”, “understand the role of autopsy in the diagnosis of child abuse” and to “utilize autopsy findings in the diagnosis of suspected child abuse”³ etc. There are also requirements for them to develop an understanding death scene investigations, underlying causes of various forms of intracranial hemorrhage, the concept of Abusive Head Trauma, court room testimony, and interaction with the legal system, to name but a few.

Autopsy exposure is not required in most general pediatrics residency programs. In addition many trainees may not have had additional exposure to histology and morbid anatomy since second year in medical school. If the CAP trainee is to develop a practical understanding of Forensic Pathology which appears to be of considerable importance to their subspecialty, other training options should be explored. Child Abuse Pediatrics fellowship programs are typically located in large cities with high volume medical examiner or coroner's offices, where there is frequent exposure to all forms of forensic pathology including those of interest to the Child Abuse Pediatrician. It seems only logical then that the trainee takes advantage of such facilities to quickly and confidently develop the comprehensive skill set required for their post-training practice.

The following suggestions are made with respect to improving a trainees exposure to forensic pathology.

2. Autopsy

Although no specific duration is specified, and notwithstanding ACGME's current limits on weekly hours worked by a trainee, there must be time within the 36 month training period dedicated to expanding the trainee's theoretical and practical exposure to forensic pathology. That autopsy rates worldwide are declining is

well known. The unintended consequence is that many recent medical school graduates lack exposure to autopsies and therefore fail to understand its limitations. Thus greater participation in autopsies is recommended, especially pediatric autopsies. The program director should enable the trainee to observe more autopsies and the enthusiastic trainee should be encouraged to perform a couple of known natural deaths. Autopsy exposure should also include cases of hangings and manual strangulation since the trainee is expected to be familiar with the features of asphyxial deaths. Most large city medical examiners offices (where most CAP programs are likely to be located) will probably have a couple of these sorts of cases every month. Other benefits to attending autopsies include the opportunity to observe bruises in their various forms and in particular for the trainee to note for themselves that what may have been an obvious injury ante-mortem, may have changed significantly in the postmortem interval. While the Royal College of Pathologists of Australasia (RCPA) requires the pediatric pathology trainee to perform 75 pediatric autopsies,⁴ the ACGME expects their trainees in to perform 40 autopsies in their year of training. Based on the ACGME requirement and on local experience the CAP trainee can reasonably be required to observe at least an autopsy a month over 30 of 36 months. The suggested case mix should include SIDS (10%), traumatic injuries (40%), natural/others (50%) and these should be documented in a portfolio of learning.

3. Histopathology

The trainee should review microscopic slides or photomicrographs of cases of subdural hematomas, bruises and abrasions, as these are areas where the pathologist is disposed to be conservative in estimating the ages of the injuries. They will appreciate why for instance it is necessary to give a range of estimates which may or may not support the clinical impression of when a particular injury occurred. As the saying goes, “a picture is worth a thousand words”. Examining slides from 30 cases (being the minimum suggested number of autopsies viewed as stated above) would be recommended.

4. Neuropathology

The CAP trainee will find a rotation in neuropathology highly beneficial. This is a field in which trainee forensic pathologists also have to develop additional expertise especially with regard to the interpretation of various traumatic brain injuries. In addition to observing brain examinations at autopsy, the CAP trainee should be encouraged to attend brain cutting sessions in the neuropathology department and learn from experienced neuropathologists.

Attendance at monthly neuropathology meetings where trauma cases are discussed (or a minimum of 30 total) is recommended. That way the CAP trainee can develop an enhanced understanding of brain injuries in its various forms including edema, herniation, contusions, lacerations, infarcts, coup and contre coup injuries as well as have an opportunity to compare the features of normal with abnormal brains. It is also a chance to see for themselves how the eyes are properly examined for retinal hemorrhages (organs so crucial to the determination of abusive head trauma).

5. Death scene management

Since the trainee is also expected to be familiar death scene investigations especially those dealing with SIDS and abusive head trauma, he or she may find it helpful to participate in the SIDS component of a medicolegal investigation course such as the one offered in Saint Louis, Missouri. The theoretical knowledge gained could be put into practice when they return home to participate in a few “runs” with local death scene investigators many of whom have considerable experience investigating child deaths. Through such exposure the CAP trainee should develop a better understanding of death scene management. The most specific published requirements on scene examination requirements are those of the Royal College of Pathologists of Australasia in which the minimum is attendance at 15 scenes.⁵

6. Forensic photography

The forensic pathologist or their assistant frequently takes a lot of pictures for “forensic” as opposed to “entertainment” reasons. The CAP trainee must understand the role and limitations of properly taken photographs including concepts of proper lighting, angles, uses of scales and patient positioning.⁶ Teaching should occur informally during the observation of a postmortem examination particularly external examinations. This could be supplemented by having the trainee take a formal course in forensic photography such as that offered by the National Center for Missing and Exploited Children⁷ or other reputable course in clinical photography.⁸ In particular the CAP trainee must become familiar with both state and federal rules of evidence regarding the admissibility of electronic recordings. Specifically Federal Rules of Evidence, Article X (Contents of Writings, Recordings, and Photographs), Rule 1001 which defines writings and recordings to include magnetic, mechanical or electronic recordings.⁹ A suggested portfolio would include photographs of 10 cases based on the International Association for Identifications certification requirements in forensic photography.¹⁰

7. Courtroom experience

The CAP trainee is also required to develop competence in presenting evidence in court and interacting with the legal system. In addition to observing their attending physicians and the trainee should also attend court with experienced forensic pathologists who go to court far more often. In particular the trainee should observe the performance of an experienced forensic pathologists on cross examination when their credentials and the basis on which a conclusion has been arrived may be challenged by defense counsel. They may also bolster their theoretical knowledge by attending workshops where expert witnesses are taught how to present evidence in court. The American Society of General Surgeons, has an Expert Witness certification program.¹¹ While actual certification by non-

surgeons is not presently possible, the organization accredits training programs that the CAP is likely to find useful. The experienced pathologist knows that the court room can be a humbling place and what may seem so convincing and definitive on rounds and mortality meetings may not stand up to a rigorous cross examination. It bears repeating that all conclusions have to be based on available evidence. It is one thing to defend one's opinion to one's colleagues. It is quite another to do so in a court of law. Following RCPA guidelines, attendance at a minimum of 15 court sessions is recommended.⁵

Of course the central question most CAP program directors would ask is how much time should be dedicated to such training in forensic pathology. That is an issue that has to be discussed further and perhaps even researched. However using the recommendations above, it is safe to estimate that the total time spent would be no more than a 5–6 weeks, based primarily on a one day per month commitment to forensic pathology that incorporates all the required activities. At the conclusion of their training, the CAP trainee is expected to have completed and documented the following during their pathology training:

1. Attended a minimum of 15 scenes
2. Attended a court of law a minimum of 15 times
3. Attended at least 30 autopsies
4. Reviewed slides from 30 representative cases
5. Attended 30 brain cutting sessions
6. Photographed at least 10 cases of abuse to the satisfaction of the attending physician

If a physician is expected to competently differentiate real from alleged abuse, it can only strengthen their credibility if they have a good grounding in forensic pathology. They will be better equipped to understand an autopsy report and perhaps ask the probing questions of their pathology colleagues that are so essential to appropriate feedback and quality control.

Conflict of interest

There is no conflict of interest or funding source to declare.

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Ken Obenson, MD, FRCPC ,
Fellow in Forensic Pathology*
Marion County Coroners Office,
Indiana University, 521 W.
McCarty Street, Indianapolis, IN 46225, USA

E-mail addresses: fineneedle@hotmail.com,
drobenson@natkem.com

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* Tel.: +1 317 327 4744; fax: +1 317 327 4563.